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OF
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LISTERINE

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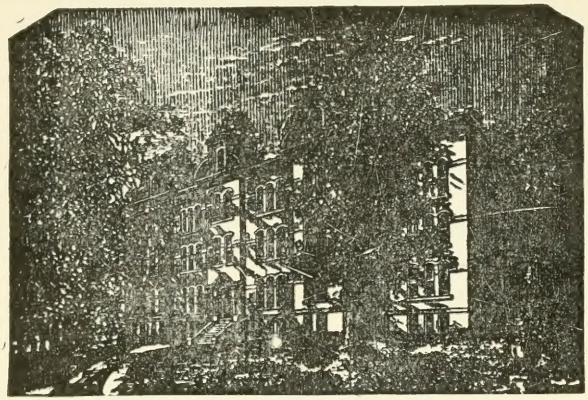

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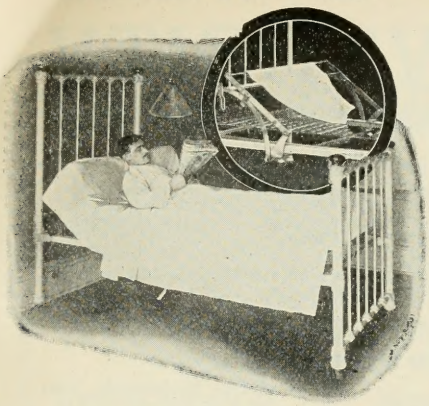

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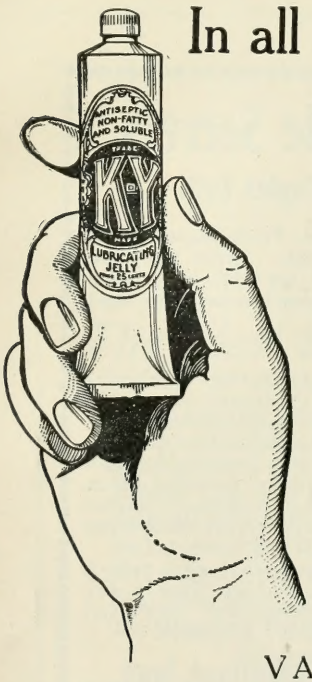

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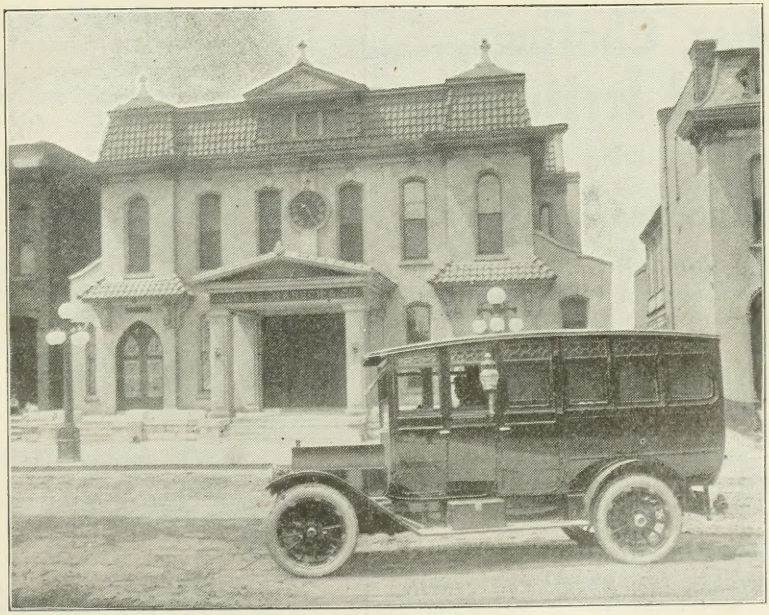

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MEDICINE AND SURGERY

CHARLES S. BRIGGS, A.M., M.D., Editor.
W. T. BRIGGS, B.A., M.D., Associate Editor.

VOL. CX. AUGUST, 1916. No. 8

Original Communications

THE TWENTY-FIFTH ANNUAL REPORT OF SURGICAL OPERATIONS AT THE BRIGGS PRIVATE SURGICAL INFIRMARY.

Reported by
W. T. BRIGGS, M.D., NASHVILLE, TENN.

(*Concluded from July Number.*)

Case No. XLVI. Dislocation of the Thumb. W. T. B., æt. 35 years, entered February 2d, having dislocated his right thumb while driving his automobile, in pushing a man aside to prevent him from walking against the machine; desired to have the reduction done with local anæsthesia. A 2 per cent novocaine solution with adrenalin was used guided by the patient's sensibility. Perfect anæsthesia was secured and after a number of efforts, at hyperextension and manipulation the base of the phalanx was released from between the two heads of the flexor brevis pollicis. A spica of adhesive strips was applied and worn for one week.

Case No. XLVIII. Endometritis, Curettage. Mrs. H. S., æt. 23 years, city, entered February 17th. This patient,

when two months pregnant, visited the country and during the visit aborted. A slight meteorrhagia persisted and after her return her physician advised her to come to the Infirmary for relief.

Under A. C. E., after divulsion of the os uteri, the cavity of the uterus was thoroughly curetted and quite a quantity of detritus and granular matter was removed and a gauze drain was inserted. The patient received local treatment on alternate days and at the end of a week went home entirely relieved.

Case No. L. Chronic Appendicitis. Cystic Ovaries. Miss P. S., æt. 36 years, city, entered February 22d. This patient presented quite a chain of nervous symptoms and suffered constantly with pain in the right subcostal region and lower abdominal segment. Examination disclosed a movable kidney, a palpably thickened appendix and both ovaries enlarged and tender. Under A. C. E. a median incision four inches in length was made and the ovaries examined. Both ovaries were found cystic and the cysts were excised, leaving the healthy portions of the ovaries intact. The appendix was delivered and removed with some difficulty, owing to its unusual length and close adhesions. The appendical stump was buried with catgut purse string suture and the parietal wound closed in the usual manner. In addition to the movable kidney there was marked gastroptosis, the stomach appearing at the wound. Nothing was done for the kidney displacement, trusting that this condition would be relieved by the general improvement. The patient was dismissed March 16th.

Case No. LII. Pelvic Abscess. Miss L. L., æt. 42 years, Nashville, Tenn., entered February 28th for relief of pelvic abscess. The patient had several chills with high temperature and rapid pulse and suffered extreme pain in the lower part of the abdomen. A decided enlargement could be palpated above the pubes extending to the left side and the mass

was exquisitely sensitive to manipulation. Under A. C. E. anæsthesia a median incision four inches in length was made and a large abscess in the left broad ligament was evacuated, as much as four ounces being withdrawn. The right side was similarly treated, but was less complicated than the left. The pelvic contents were matted together inextricably and it was thought best to place a large drainage tube from the wound through the vagina. This was done and irrigation conducted through the tube, was accomplished daily. Convalescence was tedious but the patient recovered and was dismissed in five weeks.

Case No. LIV. Varicocele. L. D., æt. 24 years, Chattanooga, Tenn., admitted March 2d with large varicocele of the left side with usual symptoms attending that condition. Under local anæsthesia with novocaine infiltration, the veins were exposed by vertical two-inch scrotal incision and the vas deferens carefully isolated from the veins and held aside. The veins were then ligated en masse with No. 2 catgut about one inch and a half apart and the intervening mass of veins excised. The stumps were approximated by tying the proximal and distal ligatures and the cutaneous wound closed with continuous catgut suture. Prompt healing followed and the patient was dismissed on the 10th day.

Case No. LVI. Epithelioma of Lower Lip. W. M. B., æt. 56 years, Memphis, Tenn., admitted March 5th for treatment of epitheliomatous ulcer of the lower lip. The patient was an inveterate pipe smoker and had first noticed an indurated spot on the lower lip at the junction of the middle and outer thirds about one year ago. The part ulcerated and on examination presented a well marked epithelial ulcer with hard, elevated edges, scanty thin discharge and occasional slight hemorrhage. Novocaine infiltration was used and a V-shaped section of the lip by incision on each side of the ulcer was made, removing about one-third of the lip. The wound edges were sutured with silkworm gut sutures and

catgut and prompt healing followed, with very little resulting deformity. The patient was discharged on the 8th day.

Case No. LIX. Strangulated Inguinal Hernia. Herniotomy. J. C., æt. 42 years, city, entered March 11th, at 10 p. m. for relief of strangulated inguinal hernia of left side. The patient had not been able to reduce the hernia for 24 hours and the usual symptoms of strangulation had supervened. The hernia was complete, was of large size and the parts were tender and painful. Under A. C. E. very little effort at taxis was made and the sac was opened by a four-inch incision made in the long axis of the tumor, and the constriction at the neck of the sack was divided. The bowel was found very dark in color but was not gangrenous and was returned into the abdomen. Bassini's operation for radical cure was done, using sutures of kangaroo tendon for the reconstruction of the canal and the cutaneous wound was closed with continuous catgut suture. Recovery ensued without wound accident and the patient was allowed to go home in two weeks.

Case No. LXI. Tuberculous Testicle—Castration. W. W., æt. 36 years, city, entered March 18th for treatment of diseased left testicle of long standing. Evidently the trouble was of tuberculous nature. The testicle was irregularly enlarged to three times its normal size, the surface of the growth was nodulated and presented three fistulous orifices through which was discharged a characteristic thin fluid. The growth was only slightly tender and caused pain only when abscess was developing. Under novocaine anæsthesia by infiltration, and nerve blocking the testicle was removed through elliptical incisions including the fistulous openings, the cord divided between clamps and the vessels ligated separately. The cutaneous wound was closed with continuous catgut sutures. Rapid healing followed and the patient was dismissed ten days after operation.

Case No. LXII. Tonsillectomy. M. T., æt. 16 years, city, entered March 29th. On account of the hypertrophied tonsils and frequent attacks of acute tonsillitis, complete removal of both tonsils was advised. Anæsthesia was induced with A. C. E. and continued with ether. After freeing the tonsil by encircling incision until the forceps lifted it out of its fossa, a wire snare was placed and its attachments were severed. There was some hemorrhage on the right side, but compression with hemostat for a few moments controlled it effectually. A large mass of adenoids was removed at the same sitting. The after treatment consisted of antiseptic mouth wash and liquid diet.

Case No. LXIV. Extreme Phimosis—Circumcision. J. P., æt. 58 years, Alexandria, Tenn., entered April 7th. This patient presented the unusual condition for his time of life of elongation of the prepuce and stenosis of the preputial orifice. Doubtless the hypertrophic elongation was the result of chronic balanitis, which gave him much annoyance. Of late the obstruction to the passage of urine caused a degree of vesical irritation which gave much trouble. After infiltration of the line of incision with novocaine, circumcision was done in the usual manner and close adhesions found between the prepuse and the glans penis. The patient returned home the same day.

Case No. LXVI. Osteoma of Terminal Phalanx of Toe. J. M., æt. 37 years, city, admitted April 17th with tumor of the terminal phalanx of the fourth toe. The condition was of many years standing, but recently had been giving him much trouble by reason of its increased size. Evidently the beginning was a subungual exostosis which gradually involved the entire phalanx. The growth was globular in shape, only slightly tender upon pressure and was hard and bone-like to touch. Under novocaine anæsthesia, amputation of the terminal phalanx was performed, obtaining the

skin covering from the plantar surface of the toe. Healing was excellent and the patient was dismissed in a week.

Case No. LXVIII. Chronic Appendicitis. Miss S. T., æt. 23 years, Springfield, Tenn., admitted April 24th. This patient presented quite a complex set of symptoms, all apparently of reflex origin. There was a slight lateral curvature in the upper dorsal region at which point she complained of almost constant pain. The X-ray failed to show any pathological change. Marked tenderness was present over McBurney's point. Although there had not been any severe attacks, she constantly complained of pain in that region. Under A. C. E. the Battle incision was made, and after breaking up numerous close adhesions, the appendix was delivered and removed. The appendix was folded upon itself into a S-shaped position and held in this position by dense bands. It also contained an enterolith. The appendical stump was buried with catgut purse string suture. The parietal wound was closed as described in preceding cases. The patient made a rather slow recovery and was dismissed May 20th.

Case No. LXX. Carcinoma of the Breast. Mrs. A. W. N., æt. 48 years, Huntsville, Ala., admitted April 28th for treatment of tumor involving the left mammary gland. The patient had noticed a lump in her breast over a year previously but her physician had advised non-interference until it should become painful. The patient was very fleshy and both breasts were correspondingly large. The infiltrated area occupied all the lower segment of the gland. The nipple was markedly retracted. The skin appeared healthy over the swelling but a nodule showed in the skin about 1½ inches from the nipple in a line above. No pain and little tenderness. The gland was freely movable upon underlying parts. No axillary involvement could be detected. Under A. C. E. the breast was removed between elliptical incisions, the upper incision being made to diverge from its course in order to include the cutaneous nodule. The fascia and part

of the pectoralis major muscle was dissected off. The axilla was opened and one gland about the size of a grape was removed. A tubular drain was inserted through the base of the axilla and the very extensive wound closed with silkworm gut suture, supplemented by Michel's clips. Perfect healing ensued and the patient was dismissed in three weeks.

Case No. LXXI. Suprapubic Cystotomy and Perineal Section for Urethral Stricture. J. F. S., æt. 52 years, Sweetwater, Tenn., entered May 6th. Five years ago this patient was operated on for an impermeable stricture by external urethrotomy and the stricture was relieved to the extent that the largest sounds passed freely and the stream of urine was normal. Subsequently the strictured condition reappeared and the urine was passed in drops. Repeated efforts were made to locate a passage for instruments without success. When admitted the patient's general condition was excellent, the urine, however, was passing in drops. At times he had paroxysms of severe straining with occasional hematuria, suggesting the presence of calculus. This, the X-ray, the only means available, failed to show. Under A. C. E. the bladder was opened through a suprapubic incision and was found enormously distended. Efforts at retrograde catheterization failed. A grooved staff was carried forward through the posterior urethra until stopped by the obstruction. Guided by this a perineal section was made. A sound was then passed through the anterior urethra to the face of the stricture and made to project into the perineal wound, cutting on this as a guide the urethra was opened. A rubber catheter was passed into the bladder guided by a blunt gorget. A second large rubber tube was introduced through the perineal wound extending through the bladder and out of the suprapubic wound which was closed snugly around this tube. On the fourth day the upper tube was shortened and drawn into the bladder allowing the suprapubic wound to close. The perineal portion was removed at the end of a week and the perineal wound healed rapidly. The catheter

was retained in the urethra, being changed every third or fourth day, when large sized steel sounds were passed. The patient was dismissed with instructions to wear the catheter for a long period.

Case No. LXXIII. Acute Appendicitis. Miss E. W., city, æt. 20 years, entered May 8. The patient had been suffering from an attack of acute appendicitis, the pain and tenderness diminishing very slowly. Under A. C. E. anæsthesia a four-inch incision was made in the right linea semilunaris and the appendix delivered without difficulty and was found to be kinked on itself about its centre by firm adventitious bands. The meso-appendix was ligated with catgut and the stump of the appendix buried with purse string suture of catgut. The abdominal wound was closed in the customary manner. The appendix was intensely inflamed and distended with fluid. The patient made an uneventful recovery and was dismissed May 20th.

Case No. LXXIV. Complete Perineorrhaphy. Mrs. G. C. P., æt. 51 years, Henry Co., Tenn., entered May 10. This patient was very fleshy and presented a complete perineal laceration with a well marked rectocele. After a number of days of preparation the operation was done under A. C. E. anæsthesia. The cicatricial tissue was dissected away, exposing the ends of the sphincter muscle and the borders of the levator ani muscle, also exposing the tear in the rectal musculature which permitted the rectocele. The mucous membrane of the two vaginal sulci was carefully freed after the method of Emmett. The rectal tear was closed by a continuous catgut suture. Two wormgut sutures were so placed as to bring the ends of the sphincter together. The crown suture was then placed and the vaginal mucous membrane was closed with catgut. There was considerable hemorrhage from a wound of the bulbar plexus; this seemed to be controlled by the crown suture when tied. Several wormgut sutures were placed through the skin and levator ani

muscles, completing the closure. The method of free dissection seems to be ideal, but the sequel shows one of the dangers of the method. On the fourth day the patient had a severe chill which recurred daily until the patient was thoroughly cinchonised with quinine under the belief that the chills were of malarial origin. The increased respiratory frequency was out of proportion to the temperature and in spite of the free use of quinine and calomel, which gave relief for a time, the fever continued, and on May 29th the patient complained of pain and tenderness over the liver. This was the first symptom referable to the liver, and it is believed there was an hepatic embolus with a possible abscess of the liver. Patient's condition was now precarious and an opportunity to operate for abscess of the liver was not permitted. The patient died June 3d.

Case No. LXXVII. Cavernous Angioma. Z. M., æt. 8 mo., Davidson County, entered May 11th. This girl baby presented a growth over the anterior extremity of the tenth rib of the left side which had steadily increased in size from birth. It was nearly as large as a hen egg, dark purple in color, and tortuous vessels showed beneath the skin around it. Under chloroform the growth was encircled by curved incisions, placed beyond the tortuous vessels. The growth was found to involve the skin and superficial fascia, and its removal occasioned only slight hemorrhage. The wound was closed with catgut and supported with adhesive strips. The wound healed promptly and the patient was dismissed May 15th.

Case No. LXXIX. Fecal Fistula. Miss J. R., Hagglersville, Tenn., entered May 16th. This case was mentioned in the first part of this report. Sufficient time having elapsed for spontaneous healing of the fistula, the patient returned for operative treatment. A number of days were spent in preparatory treatment, emptying the bowels thoroughly and measures used for the relief of the excoriation of the skin

surrounding the fistula due to the copious discharge from the opening. With A. C. E. anæsthesia two curvilinear incisions were made inclosing the fistula. These were carried through the abdominal wall, opening the peritoneum to the mesial side of the fistula. Extensive adhesions were broken up to the outer side of the fistulous tract, which was followed to the cecum and its attachments here excised by elliptical incisions enclosing the fistula. The opening in the bowel was about half an inch below the base of the appendix which had been simply ligated in the primary operation. In closing the opening a continuous suture of linen was used. A second line of No. 0 catgut was placed, re-enforcing the deeper linen sutures. The abdominal wound was closed in the usual manner and healing was satisfactory. The patient was dismissed in four weeks with perfect result.

Case No. LXXXI. Multilocular Ovarian Cyst. Mrs. A. W. W., æt. 52 years, Alexandria, Tenn., entered June 19th. This patient presented an enlargement as large as the uterus at full term. The swelling was dull on percussion with resonance in the flanks. Fluctuation was fairly well marked and the outline of the tumor was somewhat irregular. The history of the case showed that the growth began in the left side and the recent growth of the tumor upward seemed to embarass the diaphragm more than usual for the size of the tumor. The digestive apparatus was also very much disturbed. Under A. C. E. a five-inch incision was made in the linea alba exposing the tumor which was steadied by the hands of an assistant and a Spencer-Wells trocar was introduced draining the fluid from the largest locule. The upper part of the tumor seemed to be of solid material and extended upward behind the transverse colon and stomach. Efforts to bring down the mass by traction gave the impression that there were adhesions, and in order to admit the hand the incision was extended above the umbilicus. In introducing the hand, air entered and the mass was then easily delivered. It was found to be composed of a large number

of small thick walled cysts filled with colloid material. The left border of the pedicle was continuous with the mesentery of the sigmoid; this was carefully separated and pedicle was secured with silk braid and the cyst removed. The wound was closed in the usual manner. Aside from slight nausea from the anæsthestic the patient made a remarkable recovery and was dismissed July 3d.

Case No. LXXXIII. Chronic Appendicitis. E. H. R., æt. 42 years, city, entered June 21st, This patient was recovering from an attack the first in a year. The attacks were peculiar in that the abdominal pain was quickly followed by purging and intractable vomiting. The tenderness was very slight, but the thickened appendix could be felt through the thin abdominal wall. Under chloroform and ether the Battle incision was made and the small indurated appendix was removed and the wound was closed in the usual manner. The nausea with vomiting following the operation was severe, lasting a week. The patient was able to lie on his left side soon after the operation, a thing he had not been able to do for several years. Dismissed July 1st.

Case No. LXXXV. Ventrofixation for Procidentia. Mrs. S. M., æt. 54 years, Alexandria, Tenn., entered June 24th. This patient had suffered for a number of years from the usual group of symptoms commonly known as female troubles, frequent irregular menstruation, tenderness over the lower segment of the abdomen, and the descent of the uterus to the vaginal outlet when standing. Examination disclosed a hyperplastic uterus with marked metritis with a slight laceration of the cervix and also of the perineum. A very large muco-cutaneous hemorrhoid presented at the posterior verge of the anus. Under A. C. E. the cavity of the uterus was thoroughly curetted, removing a quantity of granular detritus. The hemorrhoid was excised and the wound was closed with catgut. The abdomen was then opened through the linea alba, and after scrutinizing the adnexa, which

were found normal, the uterus was suspended by two 20-day chromic catgut sutures. The wound was closed in the usual manner. The patient made an uninterrupted recovery and was dismissed July 22d.

Case No. LXXXVII. Femoral Adenoma. J. S., æt. 27 years, city, entered June 27th. This patient had experienced a case of gonorrhea in January. The left testicle became swollen and the discharge ceased. Under treatment the epididymitis subsided without a return of the discharge, and he remained well until late in May, when he presented an enlargement of the glands about the saphenous opening of the left side. This increased rapidly, but showed no tendency to suppurate. The removal of the entire mass was attempted under local anæsthesia, using a 1 per cent cocaine solution with adrenalin. The anæsthesia was satisfactory until the last stages of the enucleation, when traction was necessary. A few whiffs of chloroform were given in order to complete the enucleation. The wound was closed with catgut and the patient was able to leave July 10th. The patient was also suffering from an ingrown nail on the left foot, and on account of the location of the glands involved, the infection was attributed to this source rather than to the old gonorrhea.

Case No. LXXXIX. Fascial Sarcoma of Thigh. D. K., æt. 62 years, city, entered July 3d. This was a recurrence of the growth removed November 30th, and appeared in the lower angle of the cicatrix, and was nearly as large as a goose egg, its long diameter being placed transversely. Novocaine not being procurable a 1 per cent cocaine solution with adrenalin was used. As the enucleation proceeded the fascia was freely removed with the growth. The wound was closed with catgut, and the usual dressing was applied. The wound, though extensive, healed quickly and the patient was going about in ten days.

Case No. XCI. Azscess of the Gland of Bartholin. Mrs. W. M. B., æt. 27 years, city, entered July 6th. The patient sought relief from the intense suffering characteristic of this affection, although being a Christian Scientist she had tried to believe there was no pain. She had suffered similarly before becoming a Christian Scientist and possibly the memory of it weakened her faith. The part was anæsthetised with a weak solution of cocaine and adrenalin and a free incision was made evacuating about a tablespoonful of pus. A gauze drain was introduced and an appropriate dressing was applied.

Case No. XCII. Appendectomy and Salpingectomy. Mrs. R. P. M., æt. 41 years, Culleoka, Tenn., entered July 6th. This patient had been in delicate health for several years and had suffered repeated attacks of abdominal pain, varying in its location and followed by great pelvic tenderness. Examination disclosed a great deal of induration around the uterus which was immovable. The thickened appendix could be readily felt. Under ether anesthesia the abdomen was opened in the middle line. The left tube was concealed by a mass of thin walled cysts that ruptured easily, leaving a mass the size of a goose egg formed by the distended Fallopian tube. This mass was enucleated and the ovarian artery was secured with catgut. The right tube and ovary were found matted by adhesions into a mass. These were removed, and after breaking up numerous adhesions about the appendix, this was delivered and removed. The wound was closed in the usual manner. Considering the severity of the operation the patient recovered remarkably and was dismissed July 24th.

Case No. XCIV. Curettage for Metrorrhagia. Mrs. T. P., æt. 39 years, Allens Creek, Tenn., entered July 8th for relief of metrorrhagia dating back to March, 1915. This patient had been operated five years ago for extensive laceration of the cervix, amputation of the cervix having been

performed. She had an incomplete abortion in March and more or less constant uterine hemorrhage ever since, the discharges being without pain and free from odor and with very little constitutional disturbance. Under local anæsthesia with cocaine, the cervix was freely dilated and the uterine cavity thoroughly curetted with sharp and dull curettes, removing a large quantity of what appeared to be placental tissue. Iodine application was made and the cavity of the womb packed with gauze. After several similar treatments on alternate days the hemorrhage ceased and the patient was dismissed in two weeks.

Case No. XCVII. Complete Fistula in Ano. C. M. B., æt. 33 years, Chattanooga, Tenn., entered July 12th suffering from fistula in ano of several years standing. The cutaneous orifice situated about three-quarters of an inch from the anal verge postero-laterally, admitted the probe to pass readily into the rectum. At times this orifice would close, causing a good deal of pain until it was reopened. Under cocaine anæsthesia, the sinus was incised upon a grooved director, the roof of the canal incised after the method of Salmon and the fistulous tract thoroughly curetted. The wound was swabbed with balsam Peru and packed with gauze. The wound filled up rapidly and the patient was discharged in ten days.

Selected Articles

THE CAUSES AND TREATMENT OF STERILITY IN WOMEN.

BY ALFRED HEINEBERG, M.E.,

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Sterility in the female is defined as inability to bring forth children, but for our purpose is understood to be inability on the part of a married couple to bring about conception; for there are many instances in which conception repeatedly occurs but the resultant pregnancies never mature, and sterility exists in spite of conception. Various types of sterility are recognized, viz.: (1) primary, (2) relative, and (3) secondary.

Primary sterility is that type in which the possibility of conception is precluded because of permanent congenital or developmental defects in the structure or function of the genital organs.

Relative sterility is a state in which the absence of conception is attributable to causes which are susceptible of correction. These causes, as we shall see, may be structural, chemical, functional, or emotional. In includes also those instances of so-called sexual incompatibility, in which a man and woman may live together in sterile marriage for many years, and each, after divorce or separation, subsequently enter into fruitful marriage with another person.

Secondary sterility, or what is commonly known as "one-child sterility," occurs in those women who fail to conceive after the birth of one child. It embraces only those in whom pregnancy is desired, but is prevented by structural changes

which occur in the genital organs through puerperal infections or other complications of labor. It does not include those cases in which measures are adopted to prevent subsequent conception.

ETIOLOGY.

The causes of sterility in the female are to be sought in the husband as well as in the wife. This is a fact which can not be too thoroughly impressed nor too well remembered. The physician who subjects a woman to an operation, no matter how slight, for the sole purpose of correcting sterility before he has carefully investigated the seminal fluid of her husband is guilty of a grave injustice to his patient. It is to be constantly borne in mind that in at least 30 per cent of the sterile marriages the fault is to be found in the husband. In the examination of 129 cases of sterility Huhner[1] fixes the responsibility of the man at 59 per cent. Reynolds[2] states as his belief that in nearly 50 per cent of sterile marriages the fault is to be found in the husband. In my own experience about 40 per cent of the husbands have been found to be sterile. I would like to emphasize that the statement of the wife as to the virility of her husband must not be accepted as *prima facie* evidence of his procreative ability. It must be remembered that copulative efficiency bears no definite relation to procreative power. The causes of sterility in the female may be classified as follows:

1. Structural or physical.
2. Biochemical.
3. Functional.

Emotional or psychic.

The causes which are operative in a given case are frequently difficult to determine. In only a few cases can the sterility be attributed to a single, easily determined factor. In the majority of cases several factors are responsible, and can be discovered only after a thorough investigation. In the primary or absolute type of sterility the etiologic factors are usually easily detected, and consist of such permanent defects in structure as absent vagina or uterus, or the per-

sistence of the infantile type of uterus. The underlying causes of secondary or one-child sterility consists usually in well-recognized changes in the structure, position, or secretions of the genital organs which result from infection or injury incident to labor. These two types of sterility, however, constitute but a comparatively small proportion of the cases. By far the largest number belong to the relative type, in which the underlying causes are frequently complicated or obscure and are discovered only after a most diligent and painstaking search. Even when studied most carefully these cases are often the source of keen disappointment and make us realize the limitation of our knowledge of the causes and treatment of sterility in the female. We shall consider each class of causes separately without attempting to demonstrate the relationship of one to another, for such an attempt would necessitate the study of innumerable combinations and would serve no definite purpose. It is far better to have a thorough knowledge of the factors which may be considered to be operative in a given case.

The *structural* causes of sterility to be found in the genital organs are best studied from without inward. They comprise those conditions which either prevent the sexual act, render it imperfect, or impede the passage of the spermatozoon toward the ovum. They may be divided into two groups—(1) congenital or developmental, and (2) acquired. To the first group belong such anatomical changes as are present at birth or result from faulty postnatal development, such as imperforate hymen, absent vagina or uterus, atresia of the vagina, infantile uterus, imperforate cervix, stenosis of the Fallopian tube, etc. It is only necessary to name most of these without further comment, for their recognition is not usually difficult. A tough unruptured hymen with a small perforation, while it may prevent coition, forms no absolute bar to conception because it does not impede the advance toward the ovum of highly motile spermatozoa which may be deposited on the surface of the vulva. This same statement applies as well to stenosis of the vagina.

Flexions of the uterus, especially acute anteflextion, are frequently associated with a long, conical cervix having a narrowed canal, and a pinhole os.

This combination is often cited as a cause of sterility. The factors in this combination which may be the cause of sterility are either developmental, physical, or bio-chemical. Uteri presenting these conditions are frequently found to be small and undeveloped. It would seem better to regard many of them as hypoplastic and associated with ovaries which are also hypoplastic, and unable to produce healthy, fertile ova. The physical hindrances to conception are claimed to be the forward direction of the cervix against the anterior vaginal wall and the stenosis of the cervical canal. Huhner maintains that conception is not likely to occur unless the semen is deposited upon the cervix near the external os, and that such deposition is difficult if the cervix has a marked anterior direction.

As to stenosis of the cervical canal it seems improbable that any narrowing of the cervical canal which is not of sufficient degree to completely obstruct the flow of menstrual fluid could, in itself, impede the progress of such a small, motile organism as the spermatozoon. The baneful influences of stenosis of the cervix are more likely to be found in biochemical changes in the cervical secretion due to faulty drainage, and these will be discussed below.

The acquired structural changes usually result from inflammatory processes or the presence of neoplasms which either occlude some part of the genital canal, or render the uterine mucous membrane unfit to retain or support the fertilized ovum. Infections of the genital organs in the female will account for a fairly large percentage of sterile marriages. Structural alterations in the uterus, tubes, ovaries, or pelvic peritoneum are to be found in most women who have been infected with the gonococcus. A chronically diseased endomentrium, partly because of cellular change and partly from its toxic secretion, may either arrest the pas-

sage of the spermatozoon or present an unsuitable bed for the feltilized ovum.

The changes produced in the Fallopian tube by gonorrheal, tuberculosis, or other infection which is inimical to the union of the spermatozoon and ovum, are either occlusion of one or both ends of the tube or loss of the ciliated epithelium of the tubal mucosa. Sterility due to tubal atresia is not as a rule difficult to determine, because a tube thus occluded is usually distended, tender, and prolapsed into Douglas's cul-de-sac, where it may be easily palpated. If it be true that the passage of the ovum along the tubal canal is due to the activity of the ciliated epithelium and that impregnation occurs within the tube, we can readily appreciate that the loss of the cilia might prevent conception through failure in the conveyance of the ovum to a spot favorable for its union with the spermatozoon. Loss of cilia, even if accepted as a cause of sterility, can only be surmised for it may not be demonstrated by any known method of examination before the tube is excised and subjected to histologic study.

Physical changes in the ovary which may be the cause of sterility are either those which destroy the germinating epithelium or present the rupture of the matured Graafian follicle. An ovary subjected to chronic pelvic congestion from any cause usually develops hyperplastic tunica albuginea which is tough and resistant. As a result, the successively matured Graafian follicles fail to rupture and appear as small retention cysts beneath the surface of the ovary. Such an ovary is found to be enlarged, tender, prolapsed, and freely movable. Organized fibrinous exudate upon the surface of the ovary or adhesion of the ovary to the surrounding viscera resulting from pelvic peritonitis will either prevent the discharge of the ovum or hinder its transit from the ovary to the tube. Even in the absence of such changes in the ovary, pelvic peritonitis and its consequent adhesions may be the cause of sterility by occluding the fimbriated extremity of the tube. The rest of the tube

may not share in the inflammatory process. The starting-point of such a pelvic peritonitis may be disease of the appendix or other abdominal viscus. The previous history of the patient, in such a case, would shed much light upon the probable cause. This is especially so in "one-child sterility," in which the pelvic changes enumerated may have their origin in puerperal infection.

BIOCHEMICAL CAUSES OF STERILITY.

A most interesting phase of the subject of sterility in the female, and one which promises to shed much light upon its etiology and treatment, is that afforded by the biochemical researches of Huhner, Reynolds, and Lespinasse.[3] Huhner and Reynolds have studied the effect upon spermatozoa of the normal and pathological secretions of different parts of the female genital tract and have presented some very interesting data. The Huhner test consists in the examination of secretions from the vagina, cervix, and cavity of the uterus, beginning preferably within one-half and not later than one hour after coition, and continuing at intervals during the following twenty-four hours. First the mixture of semen and vaginal mucus is examined. In normal cases the spermatozoa remain active in the vaginal mucus for about one hour. When they have lost their motility in the vaginal secretions the cervical mucus is examined, and under normal circumstances should contain active spermatozoa one hour after coition. At the expiration of three or four hours more the secretion from the uterine cavity is withdrawn with a specially devised syringe, and when normal it should disclose the presence of a few actively motile spermatozoa. When active spermatozoa are found in the uterine secretion several hours after they have disappeared from the servical mucus the test is said to be positive. Through the careful application of this test we may determine in which part of the genital canal the activity of the spermatozoa is too rapidly arrested. Acting upon the information thus obtained our search for the cause of the arrested motility and conse-

quent sterility is more likely to be successful than by the haphazard methods heretofore employed.

If at the first examination of the mixture of semen and vaginal secretion no spermatozoa are found, the man is considered to be aspermatic; if many dead or feebly active spermatozoa are present their devitalization is to be sought in the reaction of the vaginal secretion. If spermatozoa reach the cervix in an active state and lose their motility in the cervical mucus, either the secretion of the cervix itself or that draining from the uterus is toxic. If they successfully pass through the vaginal and cervical canals but suffer arrest of motility in the cavity of the uterus, either the uterine or tubal secretions may contain the toxic agents. If repeated examinations of the uterine cavity disclose actively motile spermatozoa several hours after coition, the inference must be that the sterility (in the absence of organic lesions of the tubes and ovaries) is to be ascribed to deficient quality of ova.

Some of the alterations in the secretions which render them toxic to the spermatozoa are stated to be as follows: hyperacidity of the vaginal secretion; hypersecretion, inspissation, or infection of the cervical mucus and the presence in it of pus cells or pathogenic bacteria; the admixture of desquamated epithelium with or without bacteria in a thin, overabundant uterine secretion. The causes of such alterations are gonorrheal or other infections, deficient drainage from the cervical canal due to a pinhole size os, catarrhal changes in the cervical or uterine mucosa. The recognition of the cause is important if the proper treatment for correcting the sterility is to be instituted.

It has been proposed by Lespinasse to carry the biochemistry of sterility still further and to establish it upon a serologic basis. He explains the reason for this attempt as follows:

"It has been shown experimentally that spermatozoa, after coitus, penetrate into the abdominal cavity in large numbers. From here they are absorbed by the leucocytes, pro-

ducing lytic bodies in the serum of the woman for spermatozoa and consequently rendering her sterile.

"It is also possible, but as yet unproven experimentally, that the secretions of certain women are normally agglutinative and hence destructive to the spermatozoa of one individual and not to another, thus accounting for those cases of sterility where both individuals have children by subsequent marriages. A recent test for paternity has been based on this formation of antibodies to spermatozoa. By it for medico-legal or other purposes the father of any particular babe may be determined. The test depends upon the fact that the mother and babe are sensitized to the sera or sperm of the male individual who produced the pregnancy."

FUNCTIONAL CAUSES OF STERILITY.

The perversions of function to which sterility may be ascribed consist of some not well understood processes, among which are changes in quantity or quality of the internal secretion of the ovary, disturbances in the inter-relation of the suprarenal thyroid and ovarian secretions. Such perversions or disturbances are considered to be present in those women who rapidly become fat and suffer amenorrhea. On this hypothesis may be explained the association of fat and sterility. Out of 215 cases of obesity, Kish[4] found 21 per cent sterile, and his observation coincides with that of other investigators.

Corpus luteum deficiency may exist without either amenorrhea or obesity and still be the cause of steritlity.

PSYCHIC CAUSES OF STERILITY.

The relation of the sexual appetite and sexual pleasure in the sterile must be carefully considered as a whole, and especially in accounting for what is termed incompatibility as a cause of sterility.

While the evidence in favor of attributing sterility to absence of sexual emotion in women is not conclusive, there are some observations which would indicate that sexual

pleasure and orgasm are powerful factors in aiding conception. In 69 cases of sterility by Kish he found faulty development of voluptuousness in 38 per cent. Duncan[5] found the same condition in 31 per cent of his cases. Eulenberg[6] along with other students of this subject holds that while conception may occur if the woman is entirely passive, nevertheless active participation on the woman's part due to excitement is necessary to produce those reflex processes which render easy the passage of the spermatozoa into the uterus.

Of the reflex processes which may be assumed to accompany the orgasm, Vaertung[7] writes as follows:

"If one considers the sexual apparatus one sees that each and every part of it is concerned with aiding fertilization. While the whole process is not clear we may safely assume the following process to accompany orgasm: There is a peristaltic contraction of the vagina which holds the mass of semen against the mouth of the uterus. In these peristaltic contractions not only the vagina, the cervix, and the lower part of the uterus but also the entire uterus is apparently involved. The uterus during strong excitement, and assisted by the abdominal pressure, rises further into the pelvis, the mouth of the womb sinks lower, is opened by the uterine muscles, and ejaculates a small amount of secretion from the cervix. At the same time a sucking action is induced in the slightly opened mouth of the uterus which results in the introduction of some semen into the uterus. Rohleder[8] is of the opinion that this aspiration is the more powerful the greater the sexual excitement. In addition to this assistance must be added the action of the ciliated epithelium of the cervical canal. Summarizing the chief results of the voluptuous sensations we may note that they cause: (1) The contractions of the vagina; (2) reflex uterine activity with the corresponding aspirating action; (3) the mucous plug; (4) the activity of the ciliated epithelium; (5) an increased temperature of the entire genital apparatus."

TREATMENT.

The successful treatment of sterility in the female depends largely upon the recognition of its causative factors. Any case that seeks relief requires to be studied with infinite care in order to determine the cause or combination of causes which may be operative. Cognizance of the many complicated and baffling causes of sterility should make us hesitate to undertake its correction with the same nonchalance which has characterized most of our previous efforts in that direction.

An imperforate hymen, or one which though perforate is so tough and resistant as to prevent satisfactory sexual congress, should be either freely incised or exsected. A stenosed vagina should be overdilated under general anesthesia, either with the fingers or instrumental dilators. Subsequent contraction should be prevented by insertion of a large glass vaginal plug which should be retained for several weeks . A transverse partition forming an obstruction in the upper part of the vagina should be completely excised; the raw surfaces of the vaginal walls thus produced should be sutured to prevent the formation of adhesions and the possibility of a secondary atresia. The treatment of absent vagina with the object of correcting sterility will depend upon the condition of the uterus, tubes, and ovaries, and this is frequently difficult to determine except by direct inspection through abdominal incision. The construction of a vagina in these cases may be attempted if the other pelvic organs have been ascertained to be of normal size and structure. Sterility due to the persistence of an infantile uterus can not be corrected.

For the purpose of overcoming sterility, the treatment of acute anteflexion of the uterus associated with a cervix which is long, stenosed, and directed anteriorly should be undertaken only after careful consideration of the factors which are amenable to correction. Success will not result from any treatment of a small, hypoplastic uterus. Dilatation and curettement of the stenosed cervix are done for the

purpose of widening the canal, securing good drainage, correcting the toxicity of the discharge, and producing a healthy cervical mucous membrane; all of these things may be accomplished, and yet dilatation and curettement, according to Kelly[9], succeeds in overcoming sterility in less than fifteen per cent of the cases in which it is done. What is the reason for such a large percentage of failures? In over thirty per cent of the cases the husband is aspermatic. In a fairly large percentage the uterus and other genital organs are hypoplastic and unfitted for conception. In some cases the cervical canal soon contracts again. In few, if any, cases do dilatation and curettement sufficiently overcome the angulation of the uterus and draw the cervix backward so that it may be bathed in the pool of semen which is deposited in the posterior vaginal fornix. In order to accomplish this, some additional operation, such as that of Dudley[10] for correcting the angulation, should be done.

If occlusion of the Fallopian tube is found to be the only barrier to the union of the spermatozoon and ovum, an attempt should be made to restore the continuity of the genital canal by operation upon the tube. The scope of this paper, however, will not permit of a detailed description of the many operative proceedures which have been devised for the purpose. Salpingostomy with or without removal of a portion of the tube may suffice. Complete removal of diseased tubes without special attempt at securing a patulous genital canal has been followed by pregnancy. A woman, reported by Polak[11], who had been sterile for many years because of gonorrheal salpingitis which developed soon after marriage, became pregnant shortly after a bilateral salpingectomy. I have recently reported two cases of pregnancy following bilateral salpingectomy, and have collected thirteen similiar cases from the literature. In the surgical treatment of sterility caused by cystic degeneration of the ovary or inflammatory disease (other than abcess formation) in or around the ovary, the attempt should be made to preserve some of

the ovarian tissue and attach it near the abdominal ostium of the tube.

Correction of the chemical and biological changes in the female genital secretions which are inimical to the health and life of the spermatozoa may be attempted by the following methods. Hyperacidity of the vaginal secretion may be neutralized by douches of alkalies, as sodium bicarbonate or sodium phosphate (Huhner), used just before coition; or by the introduction of suppositories of alkaline substances several hours before. The same treatment has been effective in the comparatively few instances in which the cervical mucus was found to have an acid reaction. Chronic purulent or mucopurulent cervical discharges which are found to quickly destroy the mobility of the spermatozoa may be rendered less toxic by proper treatment. In the absence of laceration of the cervix and its sequelæ, such as hypertrophy and erosion, medical treatment will usually suffice to restore the cervical mucous membrane to a normally functionating state. This treatment may be pursued along well-recognized lines. In my own experience the best results have followed applications of compound solution of iodine to the cervical mucous membrane and packing the vaginal vault and cervical canal with an ointment consisting of ichthyol one part, wool-fat three parts, using one-quarter to one-half ounce at each application. This has yielded much better results than tampons or suppositories containing various medicaments in a glycerin base.

Only after a thorough trial of various methods should curettage be resorted to. All forms of medical treatment fail however, in correcting the endocervicitis and its toxic discharges when hypertrophy, eversion, and erosion of the cervix exist. These conditions demand appropriate surgical treatment, usually amputation of the cervix. A method of cervical amputation which I[1] have described and have employed in most instances has given me better results than the methods previously used. In those cases in which there is an associated obesity and amenorrhea, and in which the

sterility appears to be due to lack of ovarian secretion, or to some disturbance in the relationship of the thyroid and ovarian secretions, satisfactory results are sometimes produced by the administration of dried corpus luteum substances (2 grains) combined with desiccated thyroid gland (¼ to 2 grains) three times a day. A rigid dietary and regulated exercises should be instituted. The lessons to be learned from a review of this subject would seem to be:

1. Sterility in the female may be due to many causes, some apparent and easily determined, others obscure and discovered only after careful investigation.

2. Surgical treatment for its correction should not be instituted until an honest and thorough investigation has shown that the sterility may reasonably be attributed to structural changes in the female generative organ.

3. No investigation can be considered complete which does not in some way include examination of the semen.—*The Therapeutic Gazette.*

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Extracts from Home and Foreign Journals

SURGICAL

Operative Treatment of Rupture of the Liver.

Bull's patient was a girl of twelve and the bleeding was severe. She seemed to be doing well after the prompt laparotomy and suture of the liver, but the fifth day symptoms of peritonitis became evident requiring further intervention. Bile oozing from the suture was responsible for the peritonitis and also for an effusion in the pleura. Recovery was complete in two months. In Thole's compilation of 752 cases of injury of the liver given surgical treatment, the mortality was 39.5 per cent of those in which the interval before the operation was less than six hours. It rose to 86.3 per cent with an interval of twenty-four hours or longer. In the 188 cases with simple rupture—like the case reported—the mortality was 55.85 per cent and in over three-fourths of those the bleeding was the direct cause of death. Bull thinks that in his case the girl's life was saved by the two liters of saline infused into the saphena before and during the operation.

—*The Journal of the American Medical Association.*

Treatment of Septic Wounds, with Special Reference to the Use of Salicylic Acid.

Louisa Garrett Anderson, Helen Chambers, and Margaret Lacey have made observations on approximately 1000 cases of septic wounds treated in the wards and operation theaters of the Military Hospital, Endell Street, making large numbers of cultures to determine the bacterial growth in the wounds. From these observations they draw the following conclusions: 1. The bactericidal action of many of the so-called antiseptics when applied to septic wounds is negligible.

2. The majority of wounds heal without the application of an antiseptic, provided free drainage is supplied and dressings are changed frequently. Hypertonic saline, in so far as it aids physiological processes, is preferable to many so-called antiseptics. 3. A strong antiseptic, such as eusol, can sterilize the surface of a wound with which it comes in contact, and, if applied continuously, gives excellent results. 4. Salicylic acid applied in a suitable form can often save cases when other methods have failed. It is particularly useful when dressings can not be repeated at frequent intervals. 5. In all cases when recovery is delayed and the effect of the reagents of doubtful value the treatment should be controlled by making repeated cultures from the wound surfaces.

—*Medical Record.*

Cholecystostomy vs. Cholecystectomy.

F. B. Lund refers to the lack of agreement among men of experience and skill as to the indications for cholecystectomy. He reviews the recognized advantages of cholecystostomy upon which surgeons are very well agreed, and believes that cholecystectomy is indicated in the following cases: 1. In cases of very thick, acutely inflamed, bright-red, or gangrenous gall-bladders due to impaction of a stone in the cystic duct. 2. In cases of chemically thickened gall bladders. Here the thickened walls can not contract and drive out the bile, so that what bile gets back into the gall bladder is sure to stagnate there; after cholecystostomy, the walls do not contract, so that we get a mucous sinus for a long time or forever. 3. In cases of gall bladders very much distended with clear fluid from impaction of a stone in the cystic duct. 4. Whenever suspicion exists of malignant disease. 5. In chronic cholecystitis without stones, but with moderate thickening and ulceration of the mucous membrane, giving little yellow spots on the mucous surfaces, the so-called "strawberry gall bladder." These do not get well without drainage. 6. In chronic cholecystitis without stones,

but with adhesions to the surrounding organs, especially the pylorus, which cripple the latter and cause symptoms. Here, also, drainage is only temporarily efficient. The gall-bladders is a constant focus for low-grade infections and adhesions, which will continue to form and perhaps to spread until its removal, all these processes being attended with discomfort and invalidism to the possessor of the organ.—*Medical Record.*

MEDICAL

A New Paste for Skin Affections.

Unna uses and recommends a substitute for starch as a dusting powder in the treatment of eczema, sunburn, and other skin disorders, cooling pastes containing calcium or magnesium carbonate. By mixing 30 c. c. each of linseed oil and lime water and then incorporating about 20 grams each of zinc oxide and calcium carbonate a satisfactory paste will result. This combines the cooling and drying properties of starch with the action of a dilute alkali which has proved useful in eczema, burns, erysipelatoid affections and other marked inflammations of the skin. In cases with foul secretions the paste may be made antiseptic by using calcium chloride instead of the carbonate. If pastes other than the above are desired, the following mixtures will be found preferable to starch: Terra silicea 5 grams, zinc oxide, 25 grams, oil of arachis (peanut oil), 10 grams, and lard 60 grams; or one may reduce the zinc oxide in the above to 15 grams and adding 10 grams of precipitated sulphur. These are both hygroscopic.—*The Medical Brief.*

Anthrax Due to Shaving Brush.

The Hospital mentions the case of a man who died in the West London Hospital last summer after an illness of 2½ days of cellulitis of the neck determined post mortem to be

anthrax. He had just begun using a new shaving brush which, fortunately, had not been washed subsequently. Anthrax bacilli were found in this brush and also in 4 out of 5 new brushes of the same batch. (Note: While rinsing with hot tap water at approximately 70 degrees C. kills, inhibits or mechanically removes most germs, bacteria or others, liable to be present or to be conveyed to brushes, it is a wise plan to soak for an hour or so a new tooth, nail or shaving brush in strong bichlorid solution after preliminary washing and before putting the brush into commission. — *Buffalo Medical Journal.*

Ammonia as an Enema.

In the Lancet of February 12, 1916, Black writes as follows:

"May I draw your readers' attention to the effectiveness of an ammonia enema in the treatment of post-operative ileus and intestinal paresis? This sequela of an abdominal operation all have found to be most distressing to the patient, while it is exasperating to the surgeon, and in extreme cases even dangerous to the patient's life. I understand that at the front it has proved frequently a fatal complication of operations for abdominal wounds.

"The prescription is liq. ammon. fort. 1 dr., water one pint, administered as an enema; its effect is greatly enhanced by a hypodermic of pituitary extract 1 cc. half an hour previously. This treatment is sure to result in a good motion and discharge of excessive flatus, and again and again I have found it to act where the ordinary enemata, turpentine, eserine, etc., had failed. Two words of warning I would give—namely, that if used frequently, or if used in greater strength than I suggest, injury to the rectal mucous membrane is liable to take place. On two occasions the daily administration of the enema for three consecutive days resulted in a certain amount of rectal hemorrhage. On another occasion the mistake of a nurse in putting in too much

ammonia gave the patient a very painful septic colitis lasting for a week.

"My excuse in writing about this is that although I do not claim originality, I have not been able to find in any textbook any mention of ammonia used as an enema, nor have I ever met anyone in England who ever heard of it. Yet I am convinced of its importance."—*The Therapeutic Gazette.*

OBSTETRICAL

Successful Postmortem Caesarean Section.

J. F. Barnhill reports in the *Ind. Med. Jour.*, December, 1915, a case seen in consultation with Dr. W. G. Kelly and operated on by Dr. Hatfield. The mother, aged 36, was 7-months pregnant with her fourth child, dying of cerebrospinal meningitis secondary to aural infection, pneumococcic and of only two days' duration. Section was performed five minutes after death, a male child being delivered alive and surviving at least twenty-four days, to the date of the report. Quotation is also made from a report by A. E. Mack, of Omaha, in the J. A. M. A., August 28, 1915. The mother was 36, within a week of full term with her fourth child. She died suddenly of what was determined at necropsy to be pulmonary embolism. The child was apparently dead when delivered shortly after the mother's death, artificial respiration and alternate applications of hot and cold water were unsuccessful, but resuscitation succeeded after injection of epinephrin into the stump of the cord. The child was alive and healthy seven months after delivery. —*Buffalo Medical Journal.*

Bilateral Tubal Pregnancy.

Proust and Paquet report an emergency laparotomy on a woman of 29 for sudden severe pains and persisting hemor-

rhage. Both tubes contained an ovum of about two months' growth. One tube had ruptured and the other was enormously congested. The adnexa were removed on both sides but the uterus was left; part of an ovary must have been left also as menstruation continued since. They compare with this case forty-one similar observation that have been published, although in only thirty-three were the bilateral tubal pregnancies actually simultaneous. In conclusion they give the bibliographic references of eight-two cases of bilateral tubal pregnancy on record. Their personal case closely resembles that reported by P. Finley in 1910. Among the simultaneous cases mentioned are some published in *The Journal*, 1912, 1913 and 1915. The necessity for careful exploration of the adnexa on the other side is emphasized anew by this group of cases. If a hematosalpinx is found on the other side it should be removed without fail, as it is liable to rupture soon. In the case reported the intense pain was felt first on one side and at the time of the laparotomy was restricted to this, the ruptured side.—*The Journal of the Amberican Medical Association.*

Prognostic Significance of the Urine in Puerperal Infection.

Schaefer states that after the temperature becomes high in puerperal infection the urine will be found of high specific gravity, dark colored and containing in solution indican and ethereal sulphates. If we can cause the disappearance from the body of all the phenol derivatives, the prognosis should improve. Catharsis and diuresis are indicated, and the density of the urine may be brought down below 1015. A low density, when associated with high temperature, is in itself a good prognostic, and the eliminant treatment will not be required. The obstetrical or rather surgical management, of course, goes ahead as usual, but the author believes that the bacillus coli communis plays a great role as a determining cause, and that intestinal hygiene and sanitation must be guaranteed in all puerperal disorders.—*The Medical Fortnightly and Laboratory News.*

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at $1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Summer and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

CANCER.

In Volume I No. 1 of *The Journal of Cancer Research,* Frederick L. Hoffman, in an article entitled "The Mortality from Cancer in the Western Hemisphere," collates many interesting facts, among them the following:

The mortality from cancer per 100,000 population in Uruguay, Japan, England and Wales, and the United States, according to organs and parts, is as follows:

	Stomach and Liver	Peritoneom, Intestines and Rectum	Female Generative Organs	Breast
Uruquay	35.6	4.6	12.2	3.7
Japan	40.	3.5	20.9	1.8
United States	29.6	9.5	23.4	14.3
England & Wales	33.5	18.	24.3	18.6

These figures are very interesting and instructive in that they show rather conclusively, we think, that cancer is a local disease and not a systemic affection to be fought by diet, hygiene, etc., except insofar as sane living will defer old age, which is, as we all know, the most important predisposing cause of cancer. The great disparity between the deaths from cancer of the stomach and liver in Ureguay and Japan and the deaths from cancer of the female breast in the same countries speaks eloquently for some tangible local cause of cancer of the breast which should be conspicuous

by its absence in Uruguay and Japan. A careful study of the habits of the people in these countries may throw some light on the etiology of cancer of the breast at least. Why should the breast be so seldom the site of cancer in Japan and Uruguay, in both of which countries cancer of the stomach and liver are so common? This most probably is not due to inaccurate mortality statistics, the author maintains, since cancer of the breast is much easier to diagnose than cancer of the stomach. Furthermore it can not be due to better operative technic, since the operation for cancer of the breast in this country and England has been most radical for several decades. Earlier operations in malignant disease of the breast might cause this difference in the mortality rate, but it is hardly probable that the peoples of Uruguay and Japan are so much better educated in regard to tumors than the American and English people. Cuba also has a very low mortality from cancer of the breast.

So here are three countries, at least, in which for some reason or other cancer of the breast is relatively rare.

Is this simply a pathological vagary or will study of the marriage customs and sexual life so far as regards the age at marriage, virginity,the suckling of children and the average number of children, show marked differences in the customs of the peoples under discussion? Will there be any great difference in the clothing of the people so far as that might affect the breast?

Indeed it would be astonishing if there were not great differences in the dress and habits of these races and the greater the difference the better is our chance of singling out some one factor which is active in the production of cancer of the breast.

The investigation of the Registrar General of England and Wales has shown that cancer of the breast and ovaries is common among single women when proper correction is made for variations in the age distribution. It is also a well known fact that the undescended testicle is prone to malignant degeneration. Both of which facts would lead us to be-

lieve that glands which do not functionate according to the laws of Nature are more likely to become carcinomatous than glands functionating normally. In a way, lack of function leads to atrophy of parenchyma and fibrosis of intestinal tissue; chronic irritation produces a somewhat similar change and both these changes normally occur in old age. Age is not always to be reckoned in years but rather according to the condition of the tissues, and one part of the body may be old while the rest is young.

Until the physiological chemist learns the biochemical changes occurring in tissues in the precancerous stage and teaches us how to detect these changes, we must content ourselves in the fight against cancer by fighting old age and all conditions inviting local senility, such as abuse, lack of use and chronic irritations.

So far as cancer of the breast is concerned, the above figures would lead us to believe that study of the habits of the people of Japan, Uruguay, Cuba, the United States and England, would throw some light on the etiology.

Fraudulent Infantile Paralysis "Cures."

The Department of Agriculture Instructs Food and Drug Inspectors to Watch Interstate and Foreign Shipments for Fraudulent Remedies.

Washington, D. C., August 10, 1916.

Officials of the Department of Agriculture charged with the enforcement of the Food and Drugs Act expect that the outbreak of infantile paralysis will tempt unscrupulous persons to offer for sale so-called "cures" or remedies for this dread malady. They, therefore, have issued special instructions to the Food and Drug inspectors to be particularly alert for interstate shipments or importations of medicines, the makers of which allege that they will cure or alleviate this disease, for which, at the present time, no medicinal cure is known. The officials also warn the public that any

preparation put on the market and offered for sale as being effective for the treatment of infantile paralysis should be looked upon with extreme suspicion. Inspectors, accordingly, have been instructed to regard as suspicious, and to collect samples of, all medicines in interstate commerce for which such claims are made. Makers of such fraudulent remedies will be vigorously prosecuted whenever the evidence warrants action under the Sherley Amendment to the Food and Drugs Act. So-called remedies for infantile paralysis which are offered for import into the country will be denied entry.

The Food and Drugs officials are particularly watchful in this instance because it has been noted in the past that whenever a serious epidemic exists, unscrupulous dealers prey upon the fear or ignorance of the public by flooding the market with worthless, hastily prepared concoctions, for which they assert curative properties which have no foundation whatever in fact. In the present instance, inspectors already have discovered shipments of a few such mixtures.

The Department will do everything it can under Federal law to protect that portion of the public which is extremely credulous in times of panic and which will grasp at anything which promises protection or relief. The sale of such products at this time, the officials point out, is particularly threatening to the public health because many persons, relying on the false statements of impostors, neglect to secure competent medical advice. As a result, not only is the safety of the patient endangered, but in the absence of proper sanitary precautions, the likelihood of contagion is greatly increased.

It must be understood, however, that the Federal Food and Drugs Act applies only to products which are shipped in interstate commerce, that is, from one State to another, or which are offered for import or export, or which are manufactured or sold within a territory or the District of Columbia. Products which are made and consumed wholly within a single State are subject only to such State laws as

may apply and are under the control only of State health officials. The Federal law does not apply, for instance, to patent medicines made within the State of New York and sold in New York City. Persons buying or using a "remedy" made in their own State, therefore, must rely on the protection accorded them by their local health authorities.

Prevention of Infantile Paralysis.

To control the present epidemic of infantile paralysis, according to a statement issued by the United States Public Health Service today, the chain of infection between persons harboring germs of the disease and the well members of the community should be broken. Infantile paralysis is probably caused by a very minute organism found in the nasal, mouth and bowel discharges of those who have the disease or who are carriers of the germ without themselves suffering from the ailment. All of the steps in the spread of the infection are not known, but if this germ can be prevented from passing from the infected to the well person, the disease will cease.

Infantile paralysis is not a disease of recent origin. Sporadic or scattered cases have occurred throughout the country for many years, but it is only during the last decade that the infection has assumed epidemic proportions in the United States. The present epidemic in New York City, on account of its magnitude and virulence, has awakened the residents of many communities to the danger of the importation of the disease into their own midst. This danger is real, but if due precautions are exercised it is believed that the epidemic will subside.

The actual control of the present epidemic must be left to the city, State and Federal health authorities. These organizations will properly quarantine and care for affected persons, prescribe sanitary measures and limit as may be necessary the travel of individuals in order to protect neighboring districts from the infection. Individuals and com-

munities, however, can do much toward their own protection.

Poliomyelitis is probably spread directly or indirectly, through the medium of infective secretions. Account must, therefore, be taken by communities of every means by which such secretions are disseminated. Promiscuous expectoration should be controlled. The common drinking cup affords a method for the interchange of materials of this nature and should therefore be abolished. Rigid cleanliness of glasses and utensils at soda fountains, in saloons and other public places should be enforced. Flies, roaches and other vermin, by coming in contact with infective secretions, may possibly convey them to our food and thus directly bring about the development of disease. Therefore eliminate insects. Street and house dust bear a definite relation to the spread of many infections and it is not unreasonable to presume that they may be a factor in the dissemination of infantile paralysis. Maintain strict cleanliness of streets, yards and alleys in order to prevent the breeding of insects and other vermin.

See that all garbage and waste are properly cared for and collected at regular and frequent intervals. Guard all food supplies, especially milk and other perishable products. Digestive troubles of children arising from the indigestion of food of questionable quality may lower resistance. Assemblies of children in infected localities are to be discouraged, if not actually forbidden. While the above measures are in a sense general, and applicable to many epidemic diseases, their importance should not be overloowed.

Summon a physician at once and immediately notify the health officer of the presence of the disease. If the disease is present in the community, medical aid should be sought whenever a child is sick, no matter how light the illness; many cases of infantile paralysis begin with a slight indisposition. Should the illness prove to be infantile paralysis, isolate the patient, place a competent person in charge, and reduce all communication with the sick room to a minimum.

Hospital care is preferable, not only for the child but in order to better safeguard against the spread of the disease. The sick room should be well ventilated and screened. Nasal and mouth secretions should be received in cloths, placed in a paper bag, and burned. The clothing of the child, the bed linen, and the excretions should be disinfected in the same manner as for typhoid fever, that is by boiling, the long continued application of 5 per cent carbolic, or other well recognized disinfectant. The same is true for dishes and drinking vessels. Nurses should exercise the same precautions as regards cleanliness of hands in caring for infantile paralysis patients as for those afflicted with other infectious diseases.

A child may convey the disease to others even after a lapse of several weeks. For this reason quarantine should be maintained for a considerable period, usually from six to eight weeks, and the above precautions should be adhered to during this time. Disinfection of the room following recovery is advisable.

Rural Health—America's First Duty.

Washington, D. C., July -4—"The estimated economic loss which our nation suffers each year from typhoid fever and malaria alone aggregates $928,234,880, leaving out of entire account the sorrow, the unhappiness, the misery, and the inefficiency which follow in their train." Senator Joseph E. Ransdell, of Louisiana, today addressed the Senate on the subject of "Rural Health—America's First Duty." "The greatest asset which our country can have," said Senator Ransdell, "is the healthy American citizen, and valuable as it may be to increase the health of livestock and vegetation, it is of far greater importance that we throw every possible safeguard about the health of the man who is responsible for that livestock and vegetation. Over 900 million dollars lost every year! A sum which is sufficient to put our country into a state of preparedness equal to that of any nation

in the world, enough money to give us the largest navy afloat and the most efficient army which the world has ever seen, is annually offered up as a sacrifice to two diseases which are entirely preventable. Enough money to pay the annual expense of every college student in the United States is absolutely thrown away every year." Senator Ransdell estimates the grand total loss from typhoid fever at $271,932,-880 per annum, and the loss from malaria at $694,904,750 per year; the total per capita loss from these two diseases being $9.46. By comparative estimate it was shown that the United States Government appropriated $5,016,176 for the investigation and prevention of the diseases of animal and plant life and only $1,917,566 for the investigation and prevention of the diseases of man.

Give the Baby a Chance.

Bad air, bad milk, over-crowding, poverty, dirt, ignorance, heat—these combine in summer to kill the city baby. It seems as though the brunt of the cities' sanitary sins were focused on the baby didn't ask to come, to live in a hot, dark, air-tight tenement, to be fed on dirty, half spoiled milk, to be pestered with flies and mosquitoes. He is not responsible for any of these conditions and it is his right that we have fresh air, clean surroundings and descent food. The United States Public Health Service issues free of charge to all applicants a bulletin on "The Summer Care of Infants." It should be in the hands of every mother."

The United States Public Health Service Asks

Do you—

Clean your teeth and then expectorate in the washbowl?

Omit lunch to reduce weight and then overeat at dinner?

Go to the country for health and then sleep with your windows shut tight?

Wonder why you have earache and then blow your nose with your mouth shut?

Think dog muzzling cruel and then marvel at the spread of rabies?

Carefully select your brand of liquor and then feed your children unpasteurized milk?

Repeat the Golden Rule and then sneeze in somebody's face?

Go camping for your health and then place your toilet so that it drains into your water supply?

Cremation Association of America.

The fourth annual convention of the Cremation Association of America will be held in the auditorium of the Hotel Gibson, Cincinnati, Thursday and Friday, August 24th and 25th. All of our readers who believe in or are interested in cremation are cordially invited to attend. They are also eligible to associate membership upon payment of one dollar to the treasurer, Mr. E. P. Samson, 433 Sixth Avenue, Pittsburg, Pa., a formal application not being required. Money thus obtained is used for purposes of propaganda.

It is not only a source of satisfaction but pride to know that some of the most eminent members of our profession have been connected with the sanitary reform known as the cremation movement. In Germany it was advocated by Rudolph Virchow, in England by Sir Henry Thompson and Sir T. Spencer Wells, in France by Dr. Prosper Pietra-Santa, in Denmark by Dr. F. Levison, and in Italy by Drs. Gaetano Pini and M. de Cristoforis. In our own country, Dr. Francis Julius Le Moyne, a graduate of the medical department of the University of Pennsylvania, built the first crematorium in America at his own expense, and cremation was ardently promoted by Drs. Samuel D. Gross, Edward J. Bermingham, Felix Formento and Hugo Erichsen, the present president of the Cremation Association of America.

It will be news to many that the United States has forged ahead of Germany in the leadership of the cremation movement. There are 53 crematories here as compared to 48 in the Vaterland and two more are in contemplation, one at Salem, Mass., and another at Kansas City. We have also outdistanced Germany in the total number of incinerations, the figures being 86,006, up to the end of 1913, as compared to 76,350, up to the end of 1915. Statistics, recently published in "The Sunnyside," show there was an increase of 906 per cent in the number of cremations in America in 15 years, and that, as the man in the street would say, is certainly "going some."

Obituary

Elie Metchnikoff, M.D.

Prof. Elie Metchnikoff, Paris, France, the last of the pioneers in bacteriological science, died of heart disease on Saturday in the Pasteur Institute, Paris, at the age of 72 years. He had been ill for several months, and his death had been expected momentarily. He was born in Russia May 16, 1844, and began his scientific career as a naturalist. It was while studying cellular embryology in the young of marine organisms that he discovered the phagocytic action of the leucocytes. From this followed his theory of inflammation that the hyperemia and pus formation were due to the rush of the leucocytes to the injured part in their effort to destroy the invading microorganisms. His theory of immunity was also based upon this discovery, the antibodies being products of the attacking leucocytes. He came from a short-lived family, and this fact turned his attention to the subject of longevity, from which followed his theory of the intestinal origin of arterial and other degenerations which shorten life and of the action of the lactic acid bacilli in destroying the noxious intestinal flora.

He entered the Pasteur Institute in 1888, and in 1895 was appointed its director. The Nobel prize in medicine was awarded him in 1908. It is impossible in a short notice to recount all that Mechnikoff has done for science, for he was working productively in this field for forty-five years, and will rank with Pasteur, Lister, Ehrlich, Behring, and Koch as one of the giants in the practical application of bacteriology to the saving of human life.—*Medical Record.*

Reviews and Book Notices

Venesection—A Brief Summary of the Practical Value of Venesection in Disease. For Students and Practitioners of Medicine, by Walton Forest Dutton, M.D., Fellow American Medical Association; Member Medical Society of the State of Pennsylvania; Allegheny County Society; Ex-President Carnegie Academy of Medicine for Prevention of Social Diseases; American Association for Advancement of Science, etc. Illustrated with Several Text Engravings and Three Full Page Plates, one in Colors. Philadelphia, F. A. Davis Company, Publisher, English Depot, Stanley Phillips, London, 1916.

Any effort made to bring about the renaissance of a valuable therapeutic agent only a few years back termed a "Lost Art in Surgery," by the late Prof. S. D. Gross, should be warmly applauded by the profession. This small volume has been produced with that end in view. The history of blood letting as given in this book is most interesting. The technique of the various methods of bloodletting is carefully drawn and the various diseases in which the methods bring about beneficient results are fully discussed. The book should be in the hands of every practitioner of medicine as a help in times when the physicians needs help in his battle for health.

Department of Commerce, Bureau of the Census. Sam. L. Rogers, Director United States Life Tables, 1910. Prepared under the Supervision of Prof. James W. Glover of the University of Michigan; Washington Government Printing Office. 1916.

We are in receipt of this exceedingly valuable statistical report. It represents the careful, painstaking investigation of mortuary statistics in the population of the United States based on the 1910 census and are valuable as not made up from selected risks as in tables made up by life insurance companies, but based upon general unselected population. The tables should prove of value to the general public and

especially useful to public health officials, physicians, sociogolists, actuaries, statisticians and all interested in the improvement of the public health. The tables are conveniently arranged for reference and will no doubt prove of inestimable value to all who shall have occasion to use them.

Sex Problems of Man In Health and Disease—A Popular Study in Sex Knowledge, by Moses Scholtz, M.D., Chief of Clinic and Clerical Educator in Dermatology and Syphilology, Medical Department University of Cincinnati; Fellow of the American Medical Association, Ohio State Medical Society, Medical Academy of Cincinnati; Society of Moral and Sanitary Prophylaxis, etc. Cincinnati. Stewart & Kidd Co., 1916.

In this small volume the author presents his views upon the difficult subject of sex problems in health and in disease. This book constitutes an important addition to the propaganda for reform and betterment of social conditions. As the most effective means of lessening the evils that exist the author insists upon sex education and moral prophylaxis. The young generation should be taught the proper biological and social function of sex at an early age and questions relating to such conditions should be openly and plainly discussed to the end of educating the young to the social evils that result from ignorance on such subjects. The book is well worthy of study and should be in the hands of every one interested in the subject. That our readers can obtain an idea of the character of this work we give the table of contents: Introduction; Importance of Sex in the Life if an Individual; Sex in Health; Sex in Disease (see Pathology); Venereal Diseases; Functional Sexual Diseases—Chancroid, Syphilis; Conclusion.

Publisher's Department

"Elixir Saloform Comp. Flexner." Contains 20 per cent alcohol. An efficient remedy for Rheumatism, Gout, Cystitis and Uric Acid Solvent. Prepared for physicians' prescriptions only. Robinson-Pettet Co., incorporated. (See advertisement in this issue.)

"Tongaline Tablets have given my wife quicker relief for rheumatism, with which she is frequently afflicted, than any other remedy. Tongaline Liquid is one of the principal ingredients in all my prescriptions for rheumatic and neuralgic complaints. Furthermore I find it very efficacious for a rheumatic condition which I acquire as the result of exposure."

K. Y. Analgesic.

A man does not see with his eyes or hear with his ears.

He sees and hears with his *brain.*

He also feels pain with his *brain.*

Irritation or stimulation, applied to a sensory or even to a motor nerve, is reflected and transferred to the brain, and brain sensation registered. Much pain is referred to some surface area, e. g., the pain in purlatic disease that is felt in the sole of the foot.

Hence counter-irritation, or even analgesia applied over a surface area which is registering pain—has the effect in most instances of relieving that pain.

It is preferable in many cases to secure analgesia by means of external application instead of giving anodynes per os or hypodermatically.

K-Y Analgesic makes such analgesia attainable.

It is in fact, an Anodyne "First Aid."

By virtue of its contained camphor, menthol, and methyl salicylate it is active yet non-irritant. It does not blister, stain the skin, or soil the clothing, moreover it is water-soluble, can be easily removed and applied as often as may be found necessary. An especially valuable advantage is that it is *greaseless.*

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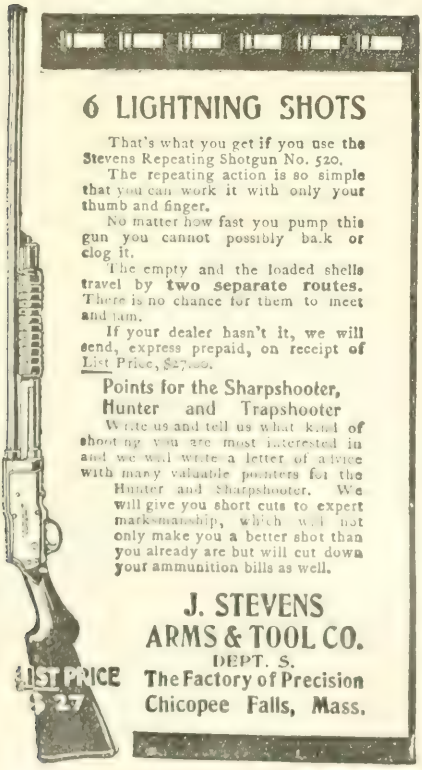
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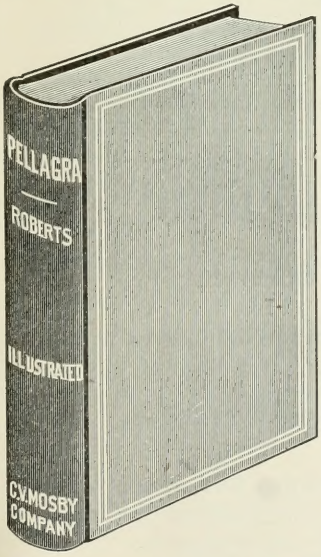

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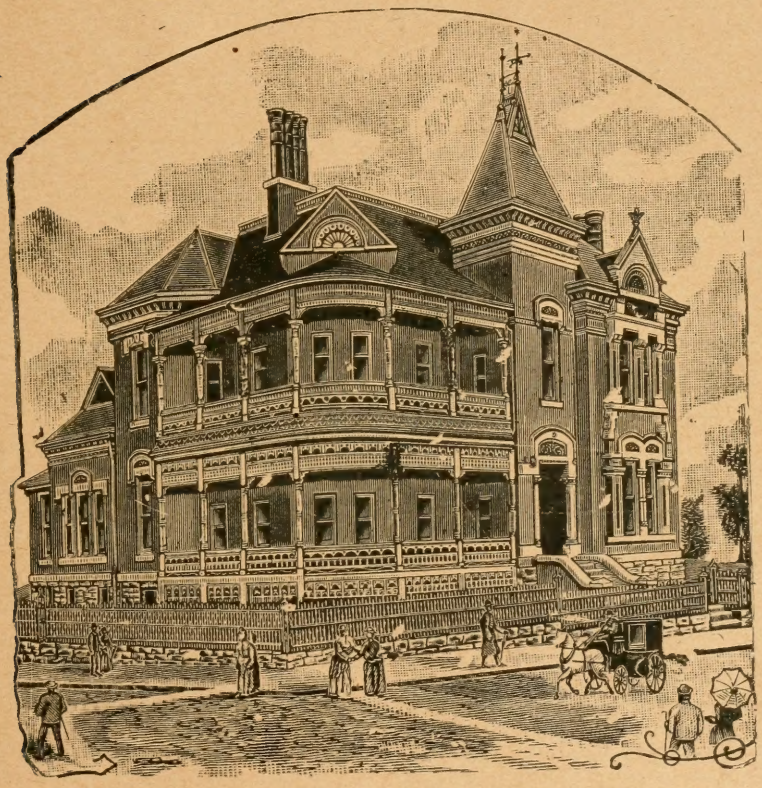

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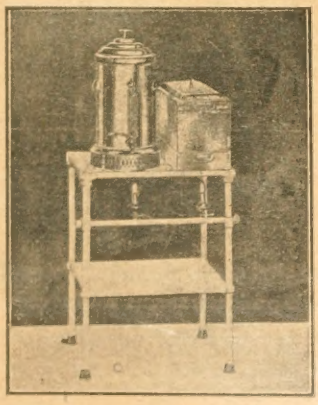

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